



# **GNC MARINE**

**PRODUCT DATA SHEET**

## **GW 20**

## GW 20

**An advanced liquid treatment to control the build-up of floating and settled solids in grey water storage tanks and pipework. This in turn controls malodour and septicity and reduces the frequency of pump outs.**

### Product Description

GW 20 is a unique product designed to improve operation efficiency of the grey water system. The easy-to-use liquid formulation contains a blend of bacteria specifically selected for their ability to degrade a wide range of organic materials found in grey water. These include fats, oil, greases, protein and starch, soap (and other detergents) and cellulose from toilet paper that arise from all normal galley and accommodation use.

A key feature of the formulation is that it contains a nascent stabilized oxygen donor that slowly releases oxygen following application. This has several benefits:

- The redox potential of the water is increased to above -300mV which prevents the waste water and sludge becoming septic due to the activity of nuisance anaerobic bacteria.
- Many of these anaerobes naturally reduce sulphate (odourless) to sulphide (rotten eggs), but find the released oxygen toxic and thus prevents their growth.
- Control of redox potential and sulphate reducing bacteria reduces the phenomenon of microbial induced corrosion which causes \$M/yr. to the marine industry, including carrion to metal grey water tanks.
- Slow release oxygen stimulates the aerobic activity of bacteria included in the GW 20 formulation and so speeds up the rate of waste degradation.
- The bacteria in the product naturally produce biochemicals that inhibit the growth of nuisance bacteria, and biosurfactants that aid cleaning.

The formulation is readily water dilutable and so can penetrate difficult to clean areas such as elbows, bends, dead-legs, stop valves, control equipment (pumps, meters)

### Application Area

Grey water originates from galley, laundry, cabin and passenger accommodation areas. It comprises a consolidated mixture of food, toilet and laundry waste water and solids. Solids can adhere and coat surfaces and block pipes and will float or sink when received into holding tanks. All such waste is either stored until it can be disposed of on land or treated on board and disposed of legally at sea.

Without treatment such solids will harbour bacteria that cause malodour and corrosion. Even if metal tanks are lined or epoxy coated, the low pH that results is aggressive enough to cause damage over time. The smell of hydrogen sulphide signifies anaerobic conditions and whilst unpleasant and low concentrations is toxic at high concentrations and work place exposure limits exist so care must be taken when working in



confined spaces. Hydrogen sulphide also indicates that anaerobic bacteria have metabolized an organic substrate and produced hydrogen. Hydrogen reacts with other molecules to form corrosive acids – hence the low pH and redox potential.

GW 20 is effective in reducing or even eliminating all the effects associated with storing untreated grey water.

## Regulatory

Grey water handling and treatment is under review by the Marine Environment Protection Committee (MEPC). It has been proposed that Annex IV of the International Convention for the Prevention of Pollution from Ships (MARPOL) should be interpreted to cover all types of waste water, including grey water.

Recent legislation controlling cruise ship discharges around Alaska introduced in 2000 (33CFR159, part E) and 'Special Areas' status under Annex IV (MECP 62) adopted in 2013 have both influenced the control of grey water handling procedures.

## Features and Benefits

### Features

- Contains a specially selected consortium of waste degrading bacteria
- These beneficial bacteria are capable of producing their own biosurfactant to aid cleaning and biofilm control
- Formulated with a source of slow release oxygen to stimulate growth of the beneficial bacteria resulting in accelerated waste degradation.
- Bacterial strains used inhibit the action of sulphate reducing bacteria
- Bacterial strains are resistant to chlorine (and other cleaning product ingredients)
- Suitable for manual and automated dosing

### Benefits

- Prevents build-up of floating and settled sludges in grey water tanks
- Reduces or prevents blockages in waste pipes
- Raise pH and redox potential of stored water
- Prevents hydrogen sulphide product and malodour
- Reduce metal cession
- Reduces frequency of pump outs and manual leaning.

## Application/Directions for Use

The formulation is highly active and it is recommended to add small doses on a regular basis.

### Manual Dosing

Add 25-30ml /m<sup>3</sup> of tank volume per day for most applications, directly metered from the jerry can. This may be increased to 50ml/day in high load or high peak flow situations, or after prolonged static resting.

### Automated Dosing

Add 25-30ml /m<sup>3</sup> of tank volume per day for most applications, metered from the jerry can via a peristaltic or piston pump. This may be increased to 50ml/day in high load or high peak flow situations, or after prolonged static resting.

In the case of both manual and automated dosing it is advisable to ensure adequate mixing or agitation for best results.

## Packaging

2x5litre case



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